

## NTS Market Spotlight: Navy Services

Specialists in EMI | Environmental | Mechanical | Shock Testing



From the shipboard shock facility in Virginia to the weapons and ordnance range in Arkansas, NTS laboratories nationwide support the development and qualification of systems for Navy and government programs.



NTS Shock Test Facility is a remote 36-acre quarry site with a large test basin (1800' long, 250' wide, and up to 130' deep) serviced by a 75-ton, stiff legged derrick supporting three equipment barges.



NTS successfully conducted shock tests on the largest submarine model ever used at an independent, inshore facility. It weighed over 270,000 pounds and measured 13 feet in diameter and 160 feet long.

### EMI / EMC

NTS offers extensive capabilities and experience for conducting Electromagnetic Compatibility (EMC) radiated and conducted testing in accordance with MIL-STD-461 (A - E)/462 and platform specific test requirements. Capabilities include 200 V/m from 10 KHz - 40 GHz susceptibility testing, up to 40 foot shielded enclosures with anechoic, low frequency magnetic field emissions and susceptibility, and availability of 480VAC, three phase, high current power. NTS has 15 shielded chambers that meet the criteria of MIL-STD-461D-E and utilizes acquisition software that can be tailored to the client's test requirements.

### Environmental and Dynamics

NTS engineers and technicians are recognized experts in the performance of a wide array of environmental simulations including Thermal Shock, Seismic/Earthquake Simulation, Solar Radiation, Rapid Decompression, Acoustic Noise and Pyro Shock. Capabilities include numerous climatic chambers, dynamic shakers, drop towers and a 28-foot centrifuge. Our engineers routinely design performance test and shock/vibration fixtures to meet unique technical requirements.

### Mechanical, Hydraulic/Pneumatics

NTS's Mechanical Laboratory and its engineers routinely design and perform challenging test programs on all types of equipment and components. NTS engineers accurately reproduce various flow, stress and fatigue conditions on test specimens that simulate actual operational parameters.

### MIL-S-901D Shock Testing

NTS has a full-spectrum test and research facility capable of managing your environmental test requirements, including MIL-S-901D, shock testing and MIL-STD-167 vibration testing of heavyweight, mediumweight, and lightweight items. NTS performs a turnkey operation to include pretest analysis, comprehensive design and fabrication of equipment foundations, instrumentation design and installation, and data analysis and report generation. NTS also offers a full line of NTS shock isolators designed and tested to reduce the acceleration experienced by equipment from the shipboard environment. Custom systems can be designed and tested within the course of a shock test program.

### About NTS

NTS is a world leader in assisting organizations to access domestic and international markets. We are a single source for a full range of integrated engineering solutions, product testing, standards compliance, project management staffing solutions, engineering and managed services. Globally accredited by leading regulatory agencies, NTS can provide cost-effective programs to meet your requirements at one of our many U.S. or international facilities, or we can provide on-site solutions. NTS is the nation's largest independent standards compliance and product testing company serving companies within the aerospace, defense, automotive, telecommunications, electronics, power, medical device, computer, software and financial markets.



NTS provides extensive testing for dynamic, environmental performance evaluation of systems and components



NTS routinely validates the performance and survivability of the critical onboard systems.



Critical performance tests for navigation, fire control and avionics are conducted while specimens are subjected to severe environments.



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## Highlights and Primary Specifications

### EMI/EMC/NOISE

- ▶ Radiated Susceptibility 200(+) V/m 10 kHz - 40 GHz
- ▶ Lightning-Multiple Stroke, Multiple Burst, and Indirect
- ▶ RF Emissions and Immunity, AC Power Fault, Surge, ESD and EFT
- ▶ Anechoic, Rooms up to 40' x 40' x 20'

### Primary Specifications

MIL-STD 461/462, MIL-STD 1275, MIL-STD 704A, RTCA/DO-160, RS101, RS103, CS101, CE101, CE102, RE101, RE102, IAW MIL-STD-1399, Structure & Airborne Noise IAW 740-1, IAW, 740-2, DC MAG Field IAW DOD-STD-1399

### MIL-S-901D Shock Testing

- ▶ Certified by Naval Sea Systems Command
- ▶ Three floating test platforms for MIL-S-901D testing
- ▶ FSP 16 x 28 feet ~ test loads up to 70,000 pounds (2)
- ▶ EFSP 16 x 46 feet ~ test loads up to 125,000 pounds

### Primary Specifications

MIL-S-901D Heavyweight & Lightweight, Navy-approved Subsidiary Shock Machine

### Dynamics

- ▶ Shakers up to 2.0" stroke, 45,000 force lbs, dual shakers up to 70,000 force lbs, 4-3,000 Hz.
- ▶ Seismic system with 10.5" stroke, 14,000 force lbs., 0.6 Hz. to 500 Hz.
- ▶ Acceleration up to 750g, 7' up to 25' radius, up to 70 channels
- ▶ Shock, 7' specimen up to 750g, Pyro-shock
- ▶ Acoustic noise
- ▶ Pitch and Roll Testing

### Primary Specifications

MIL-STD-810, MIL-STD-202, MIL-STD-883, MIL-STD-167, MIL-S-901D, RTCA/DO-160, ISTA, ASTM

### Environmental

- ▶ Multiple Temperature/Humidity Chambers from 2' x 2' x 2' to 25' x 25' x 15'
- ▶ Temperature/Humidity/Altitude Chambers, Explosive Atmosphere
- ▶ Salt Fog, Sand/Dust, Solar Radiation, Mix Flowing Gas (MFG)

### Primary Specifications

MIL-STD-810, MIL-STD-202, ASTM

### Mechanical

- ▶ Fire Resistance, Fire Spread, Needleflame
- ▶ Hydraulic/Pneumatics Pressure Impulse, Flow, Proof, Burst
- ▶ Load Test, Tensile Fatigue, Flexural Testing

### Primary Specifications

SAE ARP 1383, SAE ARP 603, SAE AS 4265, ISO 6772, SAE AS 18280

### Ordnance and Munitions

- ▶ 3000 meter large caliber range
- ▶ 20,000 square feet enclosed climatic conditioning
- ▶ Warhead arena test areas
- ▶ Shoulder-fired rocket range
- ▶ Medium caliber ranges, indoor and outdoor
- ▶ Shakers in safe areas, up to 34,000 force pounds

### Primary Specifications

MIL-STD-2105 Insensitive Munitions, MIL-STD 810